PROCEDURE I.D. NO. LA P 283 {PRIVATE }

DRUMMOND COMPANY, INC.

ISSUED: 10-21-91

RESPONSIBILITY: Q. C. MANAGER

REV. DATE: 8-4-93

SITE: *ABC COKE PLANT*

PREVIOUS REV.: 10-21-91

TITLE: *PART II - PRODUCT TESTS AND SPECIFICATIONS*

4.7.0 WATER DISTILLATION IN TAR

4.7.1 PURPOSE:

This procedure describes the method of analyzing coal tar for water content.

4.7.2 SCOPE:

This method determines the water content of tar from the transfer pump and also the outgoing tar shipments.

4.7.3 DEFINITIONS:

Coal tar is a by-product of coking coal in coke ovens.

Principle - A known mass or volume of the material is heated under reflux with a solvent which is immiscible with, and of lower density than, water. Condensed water and solvent are continuously separated in a trap and the volume of water which separates is measured.

4.7.4 REAGENTS:

Xylene.

4.7.5 APPARATUS:

A 500 mL flask fitted with a 10 mL receiver, and electric heating plate.

Measuring Cylinder - A 100 mL graduated measuring cylinder. In the case of samples with a water content exceeding 10%, a further cylinder of suitable size is required.

4.7.6 PROCEDURE:

Sampling:

When determining the water content of coal tar, measure 200 mL and transfer to the flask. Wash the measuring cylinder with successive quantities of the solvent, in all 150 mL, and add the washings to the flask.

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In the case of highly viscous crude tars, gently warm the sample until fluid and weigh to the nearest 0.5 g, the quantity equal to 200 mL, directly into the flask and then add 150 mL of the solvent.

4.7.7 DISTILLATION:

Assemble the apparatus. Heat the flask gently at first until the sample dissolves and then so that the condensate falls from the end of the condenser at a rate of two to five drops per second.

Continue the distillation until condensed water is no longer visible in any part of the apparatus (except at the bottom of the receiving tube) and until the volume of collected water remains constant. If the quantity of water present exceeds the calibrated capacity of the graduated tube, draw off water from time to time until the whole of it is finally collected in a measuring cylinder.

4.7.8 CALCULATION:

Total water amount in mL's will be divided by 2 and reported as a percentage.

4.7.9 RESPONSIBILITY FOR ADMINISTRATION:

QUALITY CONTROL MANAGER

4.7.10 AUDIT RESPONSIBILITY:

SPC COORDINATOR

4.7.11 APPROVALS:

8-4-93

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QUALITY CONTROL MANAGER, ABC COKE *DATE*

4.7.12 DISTRIBUTION:

LABORATORY TECHNICIANS (3)